**CCSS: S.ID.7** Task – Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data

**CCSS: A. REI. 6 Solve systems of equations**

**F. IF. 5**

**DEVELOP -** George has two baseball cards whose value change each year. His Derek Jeter card is worth $7 and is gaining $3 in value every year. His Barry Bonds card is worth $28 and is losing $4 in value every year.

* + - How much will each card be worth for the first 6 years?
    - What patterns do you see in the values for the first 6 years?
    - When will the cards be worth the same amount?

**SOLIDIFY –** We want to see tables, equations, and the graphs and the connections between them

Questions

* + - Where do you see the differences from one year to the next in the table, equation, or graph?
    - Where do you see the growth or the decay in the table, equation, or graph?
    - Where do you see the starting values in the table, equation, or graph?
    - What does the graph found to the left of the y axis represent?
    - What does the portion of the graph found below the x axis represent?

**DEVELOP**

Lawn 1: Lillian decided she wants to start a lawn mowing business for the summer. She borrowed $200, which she vows to repay, from her dad to buy a brand new lawn mower. She has arranged for enough yards to mow to earn $50 per week.

* + - What are her net earnings for the first 6 weeks?

Lawn 2: James’ dad doesn’t like that the grass in the yard is getting too long. He convinces James to mow the lawn for $15 per week but they do not own a lawn mower so he buys a used mower from a neighbor for $150.

* + - How much does this arrangement cost the father for the first 6 weeks?
    - What patterns do you see between the two stories over the first 6 weeks?
    - When will the cost be the same for both parties?

**SOLIDIFY –** We want to see tables, equations, and the graphs and the connections between them

Questions

* + - Where do you see the differences from one week to the next in the table, equation, or graph?
    - Where do you see the growth or the decay in the table, equation, or graph?
    - Where do you see the starting values in the table, equation, or graph?
    - What does the graph found to the left of the y axis represent?
    - What does the portion of the graph found below the x axis represent?

**PRACTICE –** This section will include practice problems for linear situations involving whole number growth or decay.

**DEVELOP –** Acompany offers two different stocks for the public to purchase. Today, stock A is worth $5 share and it has been growing at $0.75 per month. Stock B is worth $7.25 and has been growing at $1.25 a month

* Represent the value of the stock for the 6 months
* When will the stocks be worth the same amount of money?

**SOLIDIFY –** We want to see tables, equations, and the graphs and the connections between them

Questions

* + - Where do you see the differences from one month to the next in the table, equation, or graph?
    - What does it mean for x to equal a non-whole number?

**PRACTICE** – Problems dealing with ideas taught above

Possible questions to ask

For each instruction, develop a different story and the equation to fit each situation.

* Think of a linear situation where the X and Y values must both be positive
* Think of a linear situation where the X values can be pos or negative and Y values must be positive
* Think of a linear situation where the X values must be positive and Y values can be positive or negative
* Think of a linear situation where both the X and Y values can be either positive or negative.